
Commodity Internet at the Pittsburgh GigaPoP

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Overview

- Background on Pittsburgh GigaPoP
- What we do & how we do it
- Benefits



Slogan

Leave the routing to us.

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- What is it
 - Regional Network aggregation point
 - Leverages and expands PSC's historical position of providing WAN connectivity in the region



Pittsburgh GigaPoP (cont.)

- Services provided
 - MAN connectivity for PSC
 - Redundant WAN commodity connectivity
 - Access to High Performance WAN networks (vBNS, AAI)
 - Support for both IP and ATM level connectivity



The Basics

- Negotiate pricing and contracts with local infrastructure and Internet providers
 - Can also support special purpose links (i.e., AAI)
- Technical and administrative contact for all shared infrastructure
- Manages the shared connections
 - Routing, load balancing, bandwidth, etc.



Member Sites

- Responsible for links to GigaPoP
 - Can share local infrastructure is available
- Choice of connectivity options
 - Varying levels of commodity Internet bandwidth (5, 10, 15, 20 Mbps)
 - High performance connectivity (vBNS, AAI, Abilene, etc.)
- Don't need to worry about routing

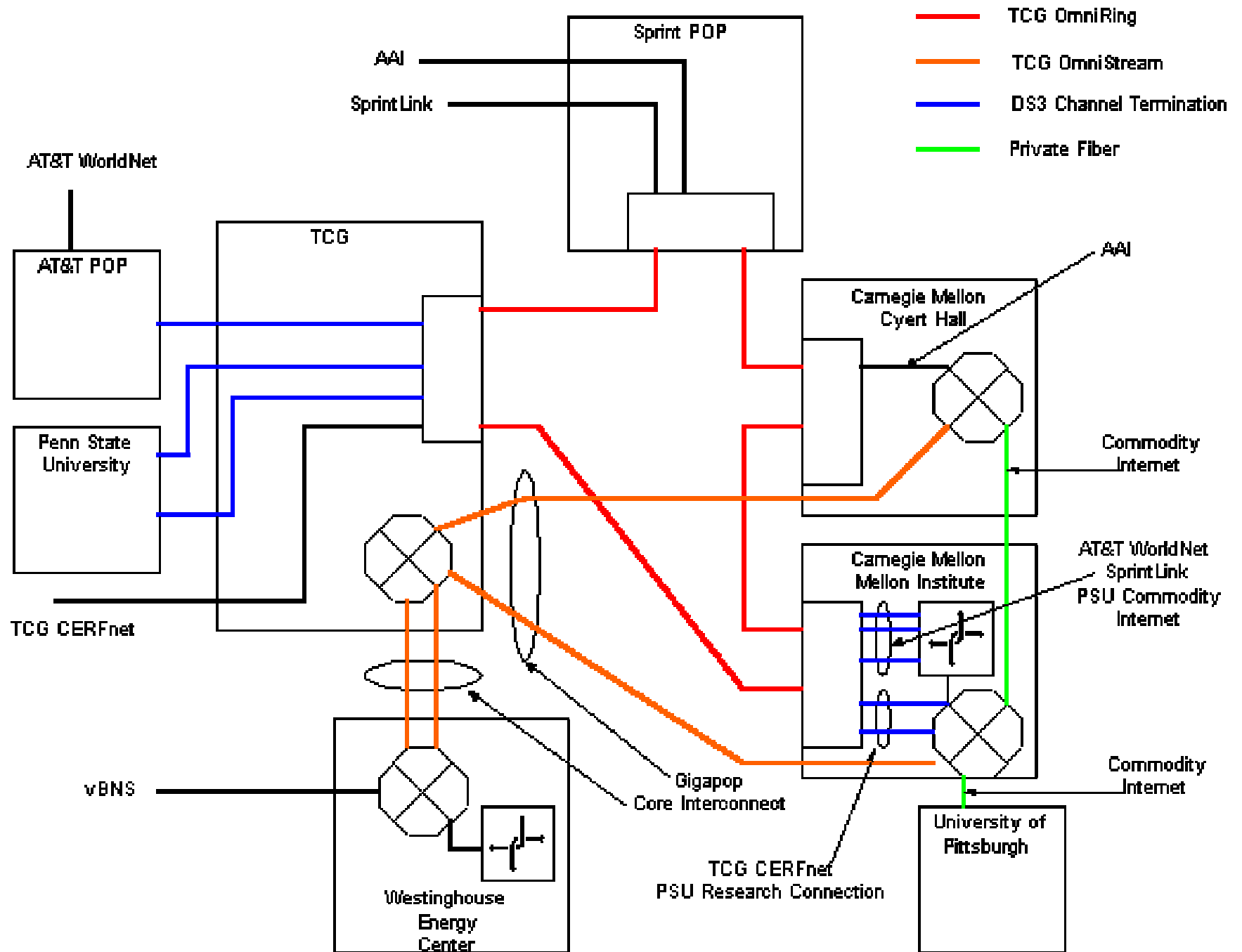


Local Infrastructure

- Aggregation of local loops
 - Commodity and High Performance networks share local loop infrastructure
 - Hybrid OC-12/ATM network
 - Reduces costs of local infrastructure
 - OC-12 Ring costs about the same as 3 DS-3s.
- Local loop management
 - Physical layer - TCG
 - ATM & IP - PSC/GigaPoP

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Commodity Internet Connections

- Planned configuration
 - Bandwidth and Redundancy
 - 10 Mbps AT&T
 - 10 Mbps TCG CERFnet
 - 22 Mbps Sprint
 - Members felt that redundancy was more important than bursting
 - Only 30 days needed to add bandwidth using existing providers



Charging

- All costs are added up
 - Wide Area Connectivity
 - Local loop (Commodity portion)
 - Equipment and maintenance
 - staffing
- Cost per Mb is established and charged to the members based on their subscription level

Keeping Costs Down

- The GigaPoP is not an ISP
 - We support site network engineering staff, not end users
- Members are responsible for their own security
- Members diagnose problems to their border router
- Reduces GigaPoP staffing costs



Benefits

- Makes life simpler for our members
- Bulk buying of local access reduces cost
- Collective purchasing allows redundancy
- Allows members to concentrate on campus network
- Promotes collaboration and information sharing among members

